



ARTERIAL STIFFNESS IS ASSOCIATED WITH THE DEGREE OF PULMONARY IMPAIRMENT IN SARCOIDOSIS PATIENTS

ACC Poster Contributions

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Introduction: Sarcoidosis (Sar) is a multisystemic granulomatous disease characterized by extensive local inflammation and affects multiple organs mainly lungs and lymph nodes. However, the relationship of pulmonary dysfunction with the vascular function remains unknown. In the present study we assessed the hypothesis that pulmonary impairment is associated with arterial stiffness in Sar patients.

Methods: Ninety five patients with Sar and eighty seven matched healthy subjects (CI) were included in the study. Sar patients were subdivided in 3 groups according to the pulmonary function test. Group "A" consisted from patients with normal pulmonary function-total lung capacity (TLC)>75% and diffusion lung capacity for carbon monoxide (DLCO)>75%- group "B" from patients with restrictive pulmonary Physiology - TLC>75%, DLCO<75% - and group "C" from patients with pulmonary fibrosis - TLC<75%, DLCO>75% -. Carotid-femoral pulse wave velocity (PWV) was measured as an index of aortic stiffness and augmentation index (Alx) as a measure of arterial wave reflections. Serum levels of soluble intercellular cells adhesion molecule 1(sICAM-1) were measured by ELISA.

Results: Compare to CI, Sar patients had significantly higher values of Alx ($16.56 \pm 13.96\%$ vs $24.2 \pm 9\%$, $p<0.001$) and PWV (7.09 ± 1.49 m/sec vs 7.7 ± 1.83 m/sec, $p<0.05$). Bivariate correlation showed that Alx in the Sar group was significantly correlated with age ($p<0.001$, $r=0.412$), TLC ($p<0.05$, $r=-0.25$), DLCO ($p<0.05$, $r=-0.276$), and s-ICAM-1 ($p<0.01$, $r=-0.36$). PWV was significantly associated with the age of the patient ($p<0.001$, $r=0.423$) and TLC ($p<0.05$, $r=-0.265$). Moreover there was a significance difference between Sar groups "A" and "C" in values of PWV (7.28 ± 1.74 m/sec vs 8.39 ± 1.56 m/sec, $p<0.05$) and sICAM-1 (287.77 ± 147.60 ng/ml vs 664.86 ± 652.46 ng/ml, $p<0.05$).

Conclusion: Arterial stiffness is associated with pulmonary impairment and increased inflammatory status in Sarcoidosis patients. These findings indicate that inflammation is probably the common pathogenetic mechanism causing arterial wall impairment and pulmonary dysfunction in this specific population.